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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/733,507	12/08/2000	Hong Wang	4810-56910	2417

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KLARQUIST SPARKMAN CAMPBELL
LEIGH & WHINSTON, LLP
One World Trade Center, Suite 1600
121 S.W. Salmon Street
Portland, OR 97204-2988

EXAMINER

COLLINS, CYNTHIA E

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/733,507

Applicant(s)

WANG ET AL.

Examiner

Cynthia Collins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-15, 18, 20-22 and 27-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-15, 18, 20-22, 27-30, 32 and 34-46 is/are rejected.
- 7) ☒ Claim(s) 31 and 33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

The reply filed May 19, 2005 has been entered.

Claims 10, 16-17, 19 and 23-26 are cancelled.

Claims 34-46 are newly added.

Claims 1-9, 11-15, 18, 20-22, 27-33 and 34-46 are pending.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

All previous objections and rejections not set forth below have been withdrawn.

Claim Objections

Claims 34, 37, 39 and 40 are objected to for failing to comply with 37 CFR 1.821, in that reference is not made to the recited amino acid sequences by use of a sequence identifier preceded by "SEQ ID NO:" in the text of the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claims 34 and 37, and claims dependent thereon, are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection. The claims are directed to the use of a nucleic acid encoding a plant cyclin-dependent kinase inhibitor polypeptide that comprises "a C-terminal region having at least 95% identity when optimally aligned, with gaps, insertions or deletions of up to 3 amino acids, with a consensus

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sequence". Use of a nucleic acid encoding a plant cyclin-dependent kinase inhibitor polypeptide that comprises "a C-terminal region having at least 95% identity when optimally aligned, with gaps, insertions or deletions of up to 3 amino acids, with a consensus sequence" does not find support in the specification as filed and thus constitutes new matter.

Applicant's comments filed May 19, 2005 have been fully considered but they are not persuasive.

Applicant maintains that Support for the language in the new claims relating to the provided consensus sequence can be found in Figure 7, as well as in the specification at pages 27-28 (discussing specific portions of plant cyclin-dependent kinase inhibitor polypeptides).
(reply page 10)

The Examiner maintains that while Figure 7 and the specification at pages 27-28 disclose a consensus sequence for plant cyclin-dependent kinase inhibitor polypeptides, the specification makes no reference to the use of a nucleic acid encoding a plant cyclin-dependent kinase inhibitor polypeptide that comprises "a C-terminal region having at least 95% identity when optimally aligned, with gaps, insertions or deletions of up to 3 amino acids, with a consensus sequence".

Claim 46 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection. Claim 46 is directed to transforming a plant cell with a nucleic acid encoding a plant Cip/Kip cyclin-dependent kinase inhibitor polypeptide.

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Use of a nucleic acid encoding “a plant Cip/Kip cyclin-dependent kinase inhibitor polypeptide” does not find support in the specification as filed and thus constitutes new matter.

Applicant's comments filed May 19, 2005 have been fully considered but they are not persuasive.

Applicant maintains that the Use of the term Cip/Kip in reference to a plant cyclin-dependent kinase or inhibitor thereof is believed to be a recognized by one of ordinary skill in the art as a class of kinases. Applicant also points out that both “Cip” and “Kip” are used in the specification in reference to a cyclin-dependent kinase', see, e.g., the list of References cited in the specification beginning at page 39. (reply page 10)

The Examiner maintains that recognition by one of ordinary skill in the art of the term Cip/Kip does not support a description of a nucleic acid encoding “a plant Cip/Kip cyclin-dependent kinase inhibitor polypeptide” as recited in the rejected claim, as the specification makes no reference to the use of a nucleic acid encoding “a plant Cip/Kip cyclin-dependent kinase inhibitor polypeptide”. The Examiner also maintains that recitation of the term Cip/Kip in a list of cited references does not support a description of a nucleic acid encoding “a plant Cip/Kip cyclin-dependent kinase inhibitor polypeptide” as recited in the rejected claim, as the specification makes no reference to the use of a nucleic acid encoding “a plant Cip/Kip cyclin-dependent kinase inhibitor polypeptide”.

Claims 1-9, 11-15, 18, 20-22, 27, 30 and 32 remain rejected, and claims 35-36 are rejected, under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant

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art that the inventor(s), at the time the application was filed, had possession of the claimed invention, for the reasons of record set forth in the office action mailed November 17, 2004.

Applicant's arguments filed May 19, 2005, have been fully considered but they are not persuasive.

Applicants traverse this rejection, and renew their arguments made previously, including arguments made in Applicants' Appeal Brief (reply page 11).

The rejection is maintained, and the Examiner renews her arguments made previously, including arguments made in response to Applicants' Appeal Brief.

Claims 1-9, 11-15, 18, 20-22 and 27-30 and 32 remain rejected, and claims 35-40 and 46 are rejected, under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for transforming a plant with a nucleic acid of SEQ ID NO:1 encoding the *Arabidopsis* cyclin-dependent kinase inhibitor ICKI, wherein the cyclin-dependent kinase inhibitor ICKI is expressed in petal and stamen primordia to inhibit floral development, and for transforming a plant with a nucleic acid of SEQ ID NO:1 encoding the *Arabidopsis* cyclin-dependent kinase inhibitor ICKI, wherein the cyclin-dependent kinase inhibitor ICKI is expressed in leaf cells to decrease ploidy, does not reasonably provide enablement for transforming a plant with a nucleic acid encoding any unspecified type of cyclin-dependent kinase inhibitor obtained from any unspecified source, wherein the cyclin-dependent kinase inhibitor is expressed in any unspecified proliferative tissue to inhibit any unspecified aspect of development of any unspecified differentiated tissue. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention

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commensurate in scope with these claims, for the reasons of record set forth in the office action mailed November 17, 2004.

Applicant's arguments filed May 19, 2005, have been fully considered but they are not persuasive.

Applicants traverse this rejection, and renew their arguments made previously, including arguments made in Applicants' Appeal Brief (reply page 11).

The rejection is maintained as set forth above, and the Examiner renews her arguments made previously, including arguments made in response to Applicants' Appeal Brief.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 39 and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 39 and 40 are indefinite in the use of parentheses. It is unclear whether parentheticals are intended to limit the claims.

Claim Rejections - 35 USC § 102

Claims 1, 8, 9, 15, and 18 and 20-22 remain rejected under 35 U.S.C. 102(b) as being anticipated by John (U.S. Patent Number 5, 750, 862, May 12, 1998), for the reasons of record set forth in the office action mailed November 17, 2004.

Applicant's arguments filed May 19, 2005, have been fully considered but they are not persuasive.

Applicants note that in column 4, lines 57-58, the cited patent identifies the WEE-1 and MIK-1 genes as being from fission yeast. Applicants also note that it has been asserted that the yeast WEE-1 or MIK-1 polypeptide would inhibit a plant CDK, and Applicants renew their argument that there is no evidence to support this assertion. Applicants further maintain that the sequences of the yeast WEE-1 and MIK-1 are not plant CDK inhibitors, even if they may be yeast CDK inhibitors. Applicants also note that new claims 35 and 36, dependent from claims 15 and 18 respectively, are provided herein and specify a plant cyclin-dependent kinase inhibitor polypeptide, and maintain that the reference therefore cannot and does not anticipate these claims. (reply pages 12-13).

With respect to Applicants' observation that the cited patent identifies the WEE-1 and MIK-1 genes as being from the fission yeast, the Examiner notes that rejected claims 15 and 18 do not exclude genes obtained from yeast, as claims 15 and 18 require only "a heterologous nucleic acid encoding a cyclin-dependent kinase inhibitor". Additionally, the specification at page 10 discloses that "A CDK inhibitor polypeptide is any polypeptide capable of inhibiting a CDK" (lines 24-25), and at page 15 the specification discloses that the term cyclin-dependent kinase inhibitor includes "any polypeptide capable of functioning to inhibit a cyclin-dependent kinase" (lines 17-21).

With respect to Applicants' assertion that there is no evidence to support the Examiner's assertion that the yeast WEE-1 or MIK-1 polypeptide would inhibit a plant CDK, the Examiner maintains that because the claims of an issued patent are presumed valid, it is presumed that the yeast WEE-1 or MIK-1 polypeptide would inhibit a plant CDK in the transgenic plants claimed in this patent, since the claimed plants may be transformed with only one of a coding sequence

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for the yeast WEE-1 or MIK-1 polypeptide, and since WEE-1 and MIK-1 are known to function by inhibiting the activity of cyclin-dependent kinases.

In this regard the Examiner further notes that a second patent, U.S. Patent No. 6,087,175, issued July 11, 2000 as a continuation of the parent (application no. 08/066,092) of U.S. Patent Number 5,750, 862. The '175 patent additionally claims, on the basis of an identical disclosure, methods that require modulating the level and/or catalytic activity of at least one of a cell cycle control protein in a plant, including a cyclin-dependent inhibitor polypeptide (WEE-1 or MIK-1), for the purpose of controlling plant cell growth, maintaining, enhancing or otherwise facilitating plant cell division, enhancing or promoting regeneration of a plant, modifying plant growth behavior, and regenerating a plant. Because the claims of the '175 patent are presumed valid, it is presumed that the yeast WEE-1 or MIK-1 polypeptide would inhibit a plant CDK in the methods claimed in this patent, since the claimed methods require that modulating the level and/or catalytic activity of at least one of a cell cycle control protein, including a cyclin-dependent inhibitor polypeptide (WEE-1 or MIK-1), in a plant result in the control plant cell growth, the maintenance, enhancement or facilitation of plant cell division, the enhancement or promotion of the regeneration of a plant, the modification of plant growth behavior, and the regeneration of a plant, and since WEE-1 and MIK-1 are known to function by inhibiting the activity of cyclin-dependent kinases.

Allowable Subject Matter

Claims 31 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Remarks

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Collins whose telephone number is (571) 272-0794. The examiner can normally be reached on Monday-Friday 8:45 AM -5:15 PM.

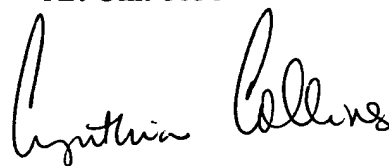
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones can be reached on (571) 272-0745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cynthia Collins
Primary Examiner
Art Unit 1638

CC

A handwritten signature in cursive script that reads "Cynthia Collins".

8/8/05